Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_ Per.: \_\_\_\_\_\_\_\_

**4.2 Similar Polygons**

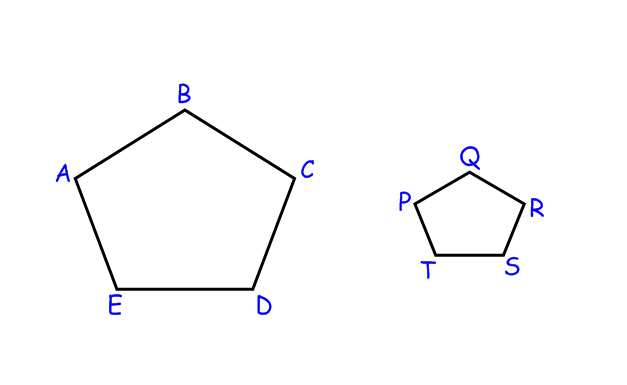
Two polygons are ***similar*** if their vertices can be paired such that:

1) their corresponding angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2) their corresponding sides are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Another way to think about similar polygons: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

When you name similar polygons, their corresponding vertices must be named in the same order.



For example, if polygon **ABCDE** above is similar to polygon **PQRST**, then we know that:

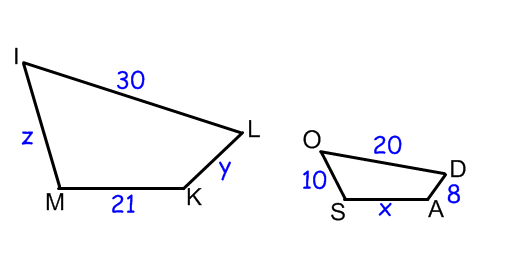
1)   

2)   

The ratio of the sides is called the **scale factor**. If, in the polygon above, AB were 12 and PQ were 8, then the **scale factor** 12:8 or 3:2.

The symbol for similar is **~ .**

Example:



Quad. MILK ~ Quad. SODA

Find:

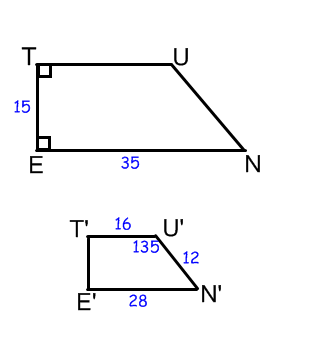
a. their scale factor by putting CORRESPONDING sides in ratio form:

b. the values of x, y, and z

c. the perimeters of the two quadrilaterals

d. the ratio of the perimeters

What can you conclude about the ratio of the sides and the ratio of the perimeters?



Quad.  ~ Quad. 

1. What is their scale factor?

2. Find: a. the measure of angle U b. TU

c. UN d. 

Two sets of two similar polygons are shown. Find the values of x, y, and z for each set.:

